



Cambria firefighters work with students in Cal Poly's Fire Protection Engineering Program.

# FILLING A FIRE PROTECTION VOID

## NEW CAL POLY MASTER'S PROGRAM MAKES AN IMMEDIATE MARK IN INDUSTRY

BY MATT LAZIER

CAL POLY'S NEW FIRE PROTECTION Engineering master's degree program hasn't simply enhanced the university's engineering curriculum – it's filling an industry void for the entire western U.S.

Now in its second year, Cal Poly's is only the third such program in the nation. The others are in Maryland and Massachusetts.

"Because of that, companies on the West Coast have had a difficult time recruiting and keeping fire protection engineers from the East Coast," said Fred Mowrer, director of the Cal Poly program.

Mowrer taught fire protection engineering (FPE) at the University of Maryland for 21 years before coming to Cal Poly in 2010 to help establish the program here. He is working with Mechanical Engineering Professor Christopher Pascual, who serves as graduate coordinator for the FPE program and whose work earned a Person-of-the-Year award in 2010 from the Society of Fire Protection Engineers.

Cal Poly was a natural fit for a West Coast program, he said; fire protection engineering is multidisciplinary, and the university boasts a strong, broad engineering curriculum.

FPE focuses on protecting against fire damage, injury and death through the design of fire-safe products, structures and systems; evaluating buildings to identify risks; conducting research; and investigating fires, Mowrer said.

"It's a niche engineering discipline, and it is cross-disciplinary," he said. "Fire protection engineers deal with mechanical engineering issues such as thermal sciences, combustion and heat transfer. And they deal with questions of materials engineering and civil engineering, in terms of how materials and structures contribute or react to fire."

The program is providing a new professional avenue for Cal Poly Engineering students. David Phillips graduated in 2009 with a Materials Engineering degree. Facing a soft job market,

he saw the potential for increased professional opportunities with an FPE master's. Now in his second year, Phillips is interviewing for a job as a fire protection engineer.

"There's definitely a need," he said. "I just did an interview with one large design/build firm; they only have one FPE on the West Coast."

Students say they'll be well-prepared to enter the workforce because of the program's hands-on focus, including a culminating project that involves examining an existing building for code compliance and running simulation models to determine how the building would react to a fire.

"It really builds on our existing engineering toolbox," said second-year student Will Fletcher. "It's exciting to know I have these abilities and that I know how to apply them in the field."

Enrollment is growing. There are double the number of students this year (about 40) over last. About a quarter of those are on the Cal Poly campus, with the rest involved through distance-learning from around the country.

Mowrer and his students said they hope to increase interest and expand the program's multidisciplinary reach.

One important step in that direction happened earlier this year, when the program secured a nearly \$1 million federal grant to coordinate a research project testing the effectiveness of compressed air foam systems in suppressing structural fires and examining whether the systems are safe for firefighters.

Cal Poly students and faculty from several disciplines (including Construction Management, Natural Resources Management and Mechanical Engineering) will work with fire departments, industry officials and researchers from California and Maryland on the study. □

For more information about the FPE program, visit:  
<http://fpe.calpoly.edu/>.